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PENNSYLVANIA VEGETABLE GROWERS' NEWS

Volume 3 1933 No. 1

Publication of The Pennsylvania Vegetable Growers' Association

The annual meeting and educational sessions of the Association, held in connection with the Farm Show, from January 16 to 18 inclusive, were well attended, and the programs were interesting and valuable.

At the Business Meeting, presided over by Gilbert S. Watts, Bellwood, as temporary chairman, the following business was transacted. The officers listed above were regularly elected, and in addition, these directors were chosen: A. K. Mende, Bristol; W. H. Evans, Wilkes-Barre; W. B. Nissley, State College; H. N. Dudley, Bustleton; Charles L. Meyer, Pittsburgh; Walter Peeling, Williamsport.

A resolution of respect was passed for Charles M. Smith, Lewistown, President of the Association for 1931 and Vice-President for 1932, news of whose death was received, and the Secretary was instructed to send a telegram of sympathy to the widow and family of the deceased.

The Treasurer reported that the balance in the treasury on January 19, 1932, was $79.94; receipts during the year were $36.00, for membership dues; expenditures were $42.48, including expenses of speakers for the 1933 meeting ($15.26), cost of cup for the prize winning vegetable display from institutions in the Welfare Department exhibit ($9.00) and cost of publication and distribution of the Vegetable Growers' News ($18.22). The balance on hand on January 16, 1933, was $73.46.

TALKS BEFORE THE ANNUAL MEETING

Market Reports, Their Collection and Use

J. G. Scott, U. S. Bureau of Agricultural Economics, Philadelphia.

Until comparatively recent years, the grower of fruits and vegetables was the least informed concerning the complex mechanism operating in the distribution and sale of his perishable commodities, and, in the absence of information about the movement of crops, the growers and shippers were continually overloading certain markets and undersupplying others. To supply growers as well as other interested persons with accurate, unbiased information on market supplies, movements, and prices,

the Federal Bureau of Markets (now the Bureau of Agricultural Economics), started a market news service in 1915, which is now the only nation-wide service of its kind in the world.

The demand for news and market information has been great at all times, but is especially so at present, when many markets are dull and prices are low.

The market reports are of three classes, with regard to the information given: 1st, car-lot shipments by States of origin, to show the number of full cars of various fresh products moving to market; 2nd, the prices and marketing and crop conditions in the large producing and shipping areas; 3rd, the prices, general market conditions, and supplies in the large markets. In addition, news on unusual market events, such as strikes, crop quarantines, embargoes, tariff changes, etc., are collected and reported.

The Market News Service does not attempt to fix prices or interfere with fair and legitimate trade practices.

Scope of the Service

The service aims to obtain full information on the two important elements of marketing - supply and demand. In analyzing supply, potential or future supply must be taken into account as well as the existing or present supply. Similar analysis of demand must also be made. Daily receipts, track holdings, both at terminal markets and reconsignment points, and storage stocks are matters of first importance. Export markets and imports must be considered, as important conditions affecting fruit markets in fall, and vegetable markets in spring.

Sources of Information

Special arrangements have been made with all railroads and boat lines of the United States for car-lot shipment information. These agencies send daily telegrams to the Washington office of the Market News Service. In the markets, news is collected by market reporters, who report approximate supplies on hand, market conditions, and the prevailing price ranges for the various grades, varieties, and kinds. Special representatives are stationed in large producing areas, such as the Presque Isle potato district, during the harvesting and shipping of the crop.

Distribution of Information by Market Stations

Primary distribution of almost all market information is made from Federal headquarters in Washington to branch offices located in the large cities. At such branch offices, market information is mimeographed and sent in the form of daily market reports to mailing lists of growers, shippers, and produce dealers to newspapers, and to certain radio broadcasting stations.

Temporary field information offices are located in heavy producing areas, to distribute market news to those most vitally interested. In addition, information is distributed by telephone and telegraph on demand.

Value of the Service

All branches of the fruit, vegetable and produce industry have demanded services from the Department of Agriculture to help in solving their particular problems. Price quotations are used by railroads and steamship companies as a basis for settling claims; railroads use crop estimates in determining car requirements for different areas; purchasing agents of state and federal institutions are guided by daily reports in planning menus and in obtaining supplies of foodstuffs; market representatives are often called upon to act as expert witnesses in court hearings of suits or other marketing cases; buyers are advised when to expect various commodities on the market; cold storage firms use quotations as a basis for determining the value of produce in storage, in settlement of claims, and in deciding on the amount of loans; equipment and supply men, such as basket and bag manufacturers, fertilizer and seed dealers, etc., watch the reports, both to judge the size of stocks to provide, and to know when to press for payment of bills; farmers operating roadside markets adjust their prices according to quotations in the daily reports.

The Market News man must be Jack of all trades - economist, credit man, railroad traffic man, legal adviser on marketing matters, expert geographer, newspaper man, writer of magazine articles, advertising man, radio announcer, and information bureau. Sample questions asked him are these:

How many cars of potatoes are on the tracks in Philadelphia this morning?

How many cars of beans on the 11 o'clock train out of Potomac Yards for Philadelphia this morning?

How many cars of cabbage were shipped from New York state yesterday?

How many bushels of apples were held in cold storage in Philadelphia on the first of this month?

What information have you on the freeze in the Rio Grande Valley night before last?

What are the requirements for marketing apples in Pennsylvania?

Have you any information on muskrat farming? Where can I get a bulletin on raising canaries?

Has spinach an acid or an alkaline reaction in the stomach?

The Market News man must average 100 per cent on such questions, and usually does so.

"Supplying Vegetables For The Roadside Market Trade".
Harry G. Brackbill
Malvern, Pa.

In supplying vegetables for the roadside market, we have found it to be entirely a different kind of proposition from growing for the wholesale markets. This is especially true if you wish to build up a large clientele of folks who depend on you throughout the season for their home grown products.

When we first started our farm market we were just growing a few vegetables - perhaps five or six. Today we grow fifteen or more different kinds with as many as five or six varieties of one vegetable. A larger assortment of vegetables encourages the customer to come where they can practically all their needs of good home grown vegetables in season. Why should a lady be compelled to stop at the corner grocery store in August for some snap beans, beets, carrots etc. because she was unable to purchase it at your market when she bought her sweet corn and tomatoes? She no doubt felt sure she could get some of those tender beets or beans again which she secured the last time she was there.

Well, here is the problem or rather two of the many problems: not only to have some fine vegetables on hand now and then, but to have a steady supply and a fair assortment of seasonal vegetables throughout the selling season. One thing will help to sell another. Those fine limas and sweet corn will often help to sell the ripe tomatoes, carrots, summer squash, etc.

We shall first consider our assortment of vegetables which we try to keep on hand as much as possible in its season. On account of space we will not mention all nor the variety. The several vegetables are asparagus, snap and lima beans, beets, carrots, cabbage, celery, eggplant, sweet corn, lettuce, cantaloupes, peas, and peppers.

In looking over our list we see some vegetables which we need to only consider one planting in order to have a steady supply, such as eggplants, peppers, and perhaps peas. This latter vegetable does its best only in the early plantings. In the case of lettuce and spinach we run about two plantings in every spring and fall. Tomato plants are set out every four or six weeks up till about the first of July which keep the market supplied with fine fruit. Limas are planted about on the same schedule, but when we come to snap beans they ought to be run in about every ten days or two weeks up till the first of August. Beets about three weeks apart with carrots about six weeks apart or three plantings a season. Last but by far not the least is the growing of sweet corn throughout the season and keeping a fairly steady supply on hand. Whether you are a gardener growing for your town route, or your stall at the market house or the roadside market, much attention can profitably be given to the steady supply of this most likeable vegetable.

We have built up a program in our sweet corn growing which brings us corn shortly after the fourth of July and supplies a continuous supply till a freeze knocks us out. Plantings are started with several different varieties during the last week in April and continued till the middle of July, about four to five days apart. Our aim is always to have a steady supply without missing a day from start to finish during the season except on Sundays on which day we are always closed. What we have just written presents a lot of extra work and attention. It is far easier to plant and care for ten acres of sweet corn than to plant two acres at five intervals four or five days apart. In case of rainy weather plantings are increased a little as soon as it dries in order that we can keep up the supply.

Much more might be written about the varieties preferred where vegetables are sold locally. Attention should always be given to what your trade demands. Some classes of trade want very small beets, peas, limas and snap beans, then again some sections want them more mature or probably a larger variety. Gathering the vegetables at the right time is highly important and then see that your customer gets a fresh product and you will have the best advertisement any one can ever offer you.

"Grading, Handling, and Storage of Vegetables"
H. C. Thompson, Department of Vegetable
Crops, Cornell University, Ithaca, New York

Eastern vegetable growers must give greater care than ever before to the grading, packing, and handling of vegetables. Our products come into competition with those shipped from other parts of the United States where great care is taken in grading and packing. Growers long distances from the market must grade and pack their products well and leave the low grades at home, because low-grade products will not pay the freight and handling charges when shipped 2000 to 3000 miles to market.

In some studies made in New York State, it was found that peas shipped from the State of Washington brought from 50 cents to $1.50 more per bushel on the New York City market than peas grown in up-state New York. On investigation it was found that Washington peas were well graded, and only the best grade was shipped. They were well packed and were kept in good condition in transit by good refrigeration, including top-icing. New York grown peas, on the other hand, were ungraded or poorly graded and the packages contained on the average about 30 per cent of peas below U. S. Grade 1. New York peas often reached the market in heated condition, while the Washington peas had a temperature of 45 to 50 degrees F. Peas must be kept at relatively low temperature to be in good condition for any considerable length of time. They deteriorate as much in quality in 24 hours at 70 degrees as they do in three weeks at 32 degrees F.

Cold Storage

Results of storage experiments carried on for one season indicates that practically any of our vegetables can be kept in storage if the proper temperature and humidity are provided. The following products keep well at 32 degrees F. with high humidity.

Crop	Length of time in good condition
Asparagus	3 weeks
Beets	4 to 5 months
Carrots	5 to 5 months
Cauliflower	5 to 6 weeks
Celery	3 to 4 months
Cabbage	4 to 5 months
Peas	3 weeks
Rutabagas	4 to 5 months
Sweet corn	3 weeks

The following products keep well at 32 degrees F. with medium humidity:

Brussels sprouts	8 to 10 weeks
Sprouting broccoli	2 weeks
Cucumbers	5 weeks
Lima beans (in shell)	3 weeks
Peppers	3 to 5 weeks

Peppers also kept well at 50 degrees F.

Onions keep best at low humidity and at 31 to 32 degrees F Snap beans (medium humidity) keep better at 36 to 40 degrees F. than at either a lower or higher temperature. Eggplant keeps well for about 4 weeks at 50 degrees F. with medium humidity. Tomatoes keep well for 3 to 4 weeks at 50 to 60 degrees F. with high humidity. At lower temperatures, the tomato does not color well when removed from storage and at higher temperature, ripening is too rapid and disease is likely to develop quickly.

PREMATURE SEEDING OF CELERY

H. C. Thompson

Contrary to a fairly common belief, premature seeding or "bolting" in celery is not caused by checking growth, by freezing, by drouth, by disease, or other injury. In fact, all of these factors mentioned tend to delay seeding. In experiments carried on at Ithaca, freezing the plants and allowing them to become checked in growth by crowding in the transplanting flats and by allowing the soil to become dry materially delayed seeding.

Of all factors studied, the only one that has resulted in premature seeding is subjecting the plants to relatively low temperature (above freezing) during the early stage of growth. If celery plants are grown in a moderately cool (50 to 60 degrees F.) greenhouse or hotbed for about two months, they are likely to go to seed before they reach marketable size. Exposing young celery plants for two weeks or longer to temperatures between 40 and 50 degrees F. will also result in premature seeding. On the other hand, if the plants are grown at a temperature above 60 degrees F. until time for setting in the field, ordinarily there will be no seeding. During the past ten years the writer has conducted dozens of experiments and in all cases celery plants that have been subjected to 40 to 50 degrees F. for two weeks or longer have produced some "seeders." Exposure for 30 days to this temperature has resulted in a large percentage of seeders; in some cases 100 per cent. In no case has there been seed-stalk development when the plants have been grown in a temperature above 60 degrees F. up to the time of planting in the field.

Experiments with cabbage and beets gave results similar to those mentioned for celery.

CULTIVATION OF VEGETABLE CROPS

H. C. Thompson

A common impression seems to prevail that one of the main benefits derived from cultivation is the conserving of moisture through the formation and maintenance of a soil mulch. Experimental evidence does not give any basis for the belief that maintaining a soil mulch is of as great value as is the destruction of weeds. In fact, all of the evidence shows clearly that the main benefit derived from cultivation is through weed control.

Experiments carried on at Ithaca, N. Y. for 6 years with beets, carrots, onions, cabbage, celery, and tomatoes showed that maintaining a soil mulch by cultivating was of little value. With carrots, cabbage, and tomatoes, the average yields were practically the same on the scraped plots as on those cultivated about once a week. With the other three crops, there was a slight gain for cultivation as compared to scraping to control weeds.

Results of similar experiments on Long Island showed no significant gain from the soil mulch on any of the six crops. On Long Island, potatoes were grown in the place of celery. In these experiments one series of plots was cultivated about once a week throughout the growing period for each crop, or until the growth of the crop interfered with cultivation. A second series was cultivated once a week until the crop was about half grown. There was no significant difference in yields between these two treatments. Cultivating beets 7 times was as good as cultivating them an average of 10.6 times per season; cultivating carrots an average of 7.2 times was equal to 11.4 cultivations; 6 cultivations of cabbage were equal to an average of 8.6 cultivations; cultivating onions 8

times produced as large yield as cultivating them 13 times; while 5 cultivations of potatoes were equal to 8 cultivations. In some seasons cultivation late in the season was of value, while in others it was a disadvantage. The evidence indicates that late cultivation is an unnecessary expense unless weeds are troublesome.

Experiments carried on at The Pennsylvania Experiment Station gave results similar to those obtained in New York.

All experimental evidence shows clearly that the main benefit derived from cultivation is fromthe control of weeds. The time to destroy weeds is while they are small and before they have caused injury to the crop plants. Weeds are more easily killed while they are small than when they have become established. The most efficient cultivator for weed control is one that cuts off the weeds just below the surface of the soil. Such a cultivator does not destroy many roots.

Under most conditions, if sufficient cultivation is given to control weeds one need not concern himself about the soil mulch. Where there are no weeds and a mulch is already formed, further cultivation is not only an unnecessary expense, but is usually injurious due to bringing moist soil to the surface where it dries out, and also to the destruction of roots. The advice, "The drier the soil, the oftener you should cultivate," frequently given can not be justified by experimental evidence or by good practice. One should bear in mind that if 3 or 4 inches of the surface soil is kept stirred, most of the roots are destroyed to that depth, so that it is impossible for the plants to utilize the nutrients in the richest part of the soil.

Cultivation given after the plants are about half grown is likely to do more harm than good, unless weed growth is troublesome. Weed growth is not likely to be troublesome if weeds have been kept under complete control up to this time.

Stirring the soil by cultivating soon after a light rain (less than one-half inch) is likely to result in loss of moisture. For this reason, one should delay cultivation until the moisture has had a chance to become distributed in the soil below the depth cultivated.

Deep cultivation is seldom justified and is certain to be injurious after the roots have developed in the zone reached by the cultivator. If the soil is well prepared before the crop is planted, deep cultivation is not necessary or desirable.

Each time we go out to cultivate, we should consider what will be accomplished by cultivation at this particular time and then do the job in the most efficient way. When nothing worth while is to be accomplished, let's take a vacation and give the roots a chance.

GROWERS SAVE GARDENS BY USING IRRIGATION

W. B. Nissley

During the past three years especially, vegetable growers have suffered complete or partial crop failures caused by drouth. Some farmers have turned to portable irrigation to save their crops, and various appliances and devices have been adapted to conditions on the individual farms.

A Fayette county grower irrigates five acres of vegetables with a lateral line 400 feet long, nozzles spread every three feet and using four sizes of pipe from 1½ inches to 3/4 of an inch in diameter. His supply line is 2½-inch pipe laid underground. A 3-horse power electric motor supplies power and a small centrifugal pump produces 45 gallons of water a minute.

An Elk county grower uses an old automobile motor for power, a $14 pump, 200 feet of garden hose for a supply line, and an 80-foot nozzle line to irrigate one acre.

A Schuylkill county grower irrigates 20 acres with an old 4-cylinder automobile motor, a pump of 5,000 gallons an hour capacity, 200 feet of 3-inch intake line, and six lines of laterals 400 feet long.

Another Schuylkill county man irrigates eight acres with a 3-horsepower gas engine, a pump of 5,000 gallons an hour capacity, a 3-inch second-hand supply line, and four nozzle lines 400 feet long.

QUANTITY OF IRRIGATION WATER AND TIME OF APPLICATION

G. J. Stout

The rainfall in most parts of Pennsylvania averages about one inch per week or less during the summer months. This is approximately the amount of water required by a crop of vegetables but since so much of the rain that falls is lost either by seepage, evaporation, or run-off, additional water in the form of irrigation is necessary in order to obtain maximum yields of high quality produce. Also, about one year in two, one of the hot summer months will have a rainfall less than half an inch. During such seasons irrigation takes the form of crop insurance for without it, serious drought injury is likely to result. During such seasons, the irrigation application should be sufficient to bring the total amount of water, rainfall plus irrigation, to at least four inches per month, or a total of about 105,000 gallons per acre per month.

When seeds have just been sown, it may be necessary to water the ground lightly and rather frequently to keep the surface from drying out. As soon as the seedlings have appeared above ground, the water applications should be less frequent and heavier.

In the case of shallow-rooted crops such as celery, lettuce, radishes, and onions, one acre-inch of water at a time applied once a week is sufficient except in very hot dry weather. One inch of water will wet the soil to a depth of from five to eight inches, depending on the type of soil. For most crops which root more deeply, it is best to apply more water at a time and apply it less frequently, often putting on two or more inches at a time and making the applications two weeks apart. In this way, the deeper roots will be reached, less water will evaporate from the soil surface, and deeper rooting of the crops will tend to result. This is a particularly convenient practice with a portable irrigation system because the lines do not have to be moved nearly so often.

The importance of time of day to apply irrigation has been unduly emphasized. It is best to water early enough in the day so the plants may dry off before night comes, but during a dry season, it is usually necessary to water continuously day and night over some parts of the farm and it is very unusual to find any serious injury which can be traced to watering at the wrong time of day.

A SUCCESSFUL METHOD OF GROWING CABBAGE

W. B. Nissley

Grower: R. B. Stutzman, Vintondale, Indiana County

Soil Preparation
1931 - Hay followed by rye cover crop
1932 - Rye plowed May 15
Planted - June 20.

Manure used - None.

Lime Used - Three-fourth ton lump lime per acre.

Fertilizer
Analysis - 10-16-10
Amount - 800 lbs. per acre
Applied - broadcast
Side dressing - 150 lbs. sulphate of ammonia per acre.

Source of plants - Home grown

Planting distances 20" x 34"

Number of sprays - 2

Yield per acre - 13 tons

Weather conditions - dry

Variety - Short Stem Danish Ballhead (Reed Bros.)

A SUCCESSFUL METHOD OF GROWING SWEET CORN

W. B. Nissley

Grower: C. A. Shenot, Wexford, Pa.

Soil preparation: Green manure crops are grown; little barnyard manure is used. Commercial fertilizer is used in the row. Liming is done when needed, according to tests.

Varieties: Own strains of Extra Early Bantam and Whipple's yellow, selected with reference to the market requirements, and quite free from wilt, were used.

A SUCCESSFUL METHOD OF GROWING CELERY

Charles K. Hallowell
Phila. County Agent

Growers: N. F. Comly's Sons, Bustleton. (Members of the Comly family have been operating the one farm for over sixty years)

Philadelphia County produces 1/3 of celery grown in Pennsylvania.

In 1931 Philadelphia County growers marketed through Philadelphia wholesale markets 127 carloads of celery.

Average yield of celery is approximately 250 two-thirds crates per acre.

Following is applied to celery field before planting:

8 tons manure per acre
1 ton ground limestone per acre
1 ton 5-10-6 fertilizer per acre.

Seed sown May 5th - rows 12 inches apart.

Plants sprayed twice with Bordeaux mixture, while in seedbed.

Transplanted to field July 11 in rows 36 inches apart and plants 6 inches apart in row.

All cultivation done with a tractor cultivator.

Spraying also done with tractor - the sprayer pump being operated by power take-off from tractor.

11 sprayings made with Bordeaux.

Blanching - done by soil.

For 2 years previous Comlys have conducted celery spraying demonstrations in cooperation with Agricultural Extension.

Average increase of sprayed celery over unsprayed celery was 58 two-thirds crates per acre.

All celery placed in commercial cold storage where a temperature of 31° and a humidity of 90° has been maintained. Under these conditi yellow celery may be stored for 3 months, and green celery for 4 months.

Philadelphia County stored 30,000 crates of celery in cold storage during October and November, 1932.

TESTS OF VARIETIES AND STRAINS OF VEGETABLES IN 1932

W. B. Mack

Some new strains and varieties which appeared to good advantage in the trials at State College in 1932 are those described herewith. All strains described are considered worthy of further trial by growers.

Sweet Corn

Spanish Gold, a first early variety, practically as early as Golden Early Market, and somewhat more vigorous. Ears a little smaller in diameter than those of Golden Early Market, but of about the same length. Quality good. Recommended for trial.

Golden Early Market, the largest eared of the first early yellow varieties. Unfortunately susceptible to wilt disease. Recommended if seed is treated.

Extra Early Bantam. A few days later than the foregoing varieties, more vigorous and less susceptible to wilt disease.

Golden Bantam, 10-14 Row Top Cross x 1339. A late strain of 10-14 row Bantam, quite vigorous and resistant to wilt disease. Quality very good; ears somewhat lighter yellow than typical Bantams, 7½ to 8 inches long, very uniform.

Whipple's Yellow, which produces a large, handsome ear of good quality - the leader among the second early varieties. Not altogether resistant to wilt diseases, but less susceptible than many varieties of the same class in earliness.

Early Evergreen Hybrid D 14 x 5. The best Evergreen in the 1932 trials at State College, though subject to earworm damage because the husks are not heavy nor tightly closed over the end of the ear.

Mills' Golden Sunrise. A large yellow corn, very vigorous and disease resistant, of good quality, mature at the same time as Bantam Evergreen (87 days). Ears 10 inches long, mostly eight-rowed, somewhat tapering. Recommended for trial, as a late market or canning variety.

Tomatoes

Penn State Earliana, a smooth and uniform fruited, vigorous, early strain of this variety, now well known in the state.

Speed, a self-topping Earliana, yielding most of its crop very early in the season. With a little more breeding, this variety should prove very valuable. Recommended for trial.

Chalk's Jewel No. 3, a specially early strain, with all the other desirable characteristics of this variety.

Scarlet Topper or Pritchard, a self-topping variety similar to Marglobe in fruit shape, but somewhat more orange-red in color. Little earlier than Marglobe. Recommended for trial as a main-crop market variety.

Certified Marglobe. Several strains of Marglobe were very desirable in fruit type; one strain was more vigorous and productive than the others. All are recommended for canning or main-crop market plantings.

Beans

Tendergreen, New Stringless, and Giant Stringless Greenpod are among the best round-podded green varieties; they are smoother than the well-known Stringless Greenpod.

Bountiful is the leading commercial flat-podded green bean.

Sure Crop Wax or Yellow Bountiful is the leading flat-podded yellow bean.

Pencil Pod Wax and Brittle Wax are recommended as the best commercial round-podded wax beans.

Tennessee Greenpod is a new flat-podded green bean, of poor appearance but finest quality, and is recommended for home gardens only.

Peas

Laxton's Progress is a very productive, large-podded, sweet wrinkled dwarf pea, of best quality, the leader among the early market peas.

Epicure was a very vigorous, prolific, small-podded, sweet, late canning pea.

Spinach

Long Standing Bloomsdale and Bloomsdale Reselected were outstanding savoy-leaved varieties, for early and late planting.

Beets

Several strains of Crosby Egyptian Special and of Detroit Dark Red were especially desirable in form, color, and uniformity.

Carrots

One strain of Red Cored Chantenay was excellent in form, color, size, and uniformity of type.

Cauliflower

The Super Snowballs were earlier, more uniform, smaller, and surer heading than the standard Snowball types, in the fall trials.

Chinese Cabbage

Chihli is the outstanding commercial variety

Peppers

World Beater strains were among the best commercial sorts. California Wonder excels in quality, but is late and not very prolific.

Squash

Golden Delicious is recommended for trial. The yield is less than Boston Marrow, but quality is excellent.

Cabbage

Golden Acre, Copenhagen Market, and Enkhuizen Glory provide an excellent succession for early and midseason; Penn State Ballhead was best in the late class.

Celery

Salt Lake is worth trying as a late green celery. It is intermediate between Fordhook and Pascal in height and quality. For the quality market, there is none better than Fordhook. Early Fortune is an excellent early yellow variety.

Cucumber

Davis Perfect, Veridark, The President, and Longfellow were good in 1932 trials; the first two are somewhat shorter than the last two. All are smooth and of good quality for slicing.

Double Yield Pickle was good in shape, especially for dill-size, though color is not especially dark.

The following list of varieties recommended for commercial growers was compiled by J. F. Huffington of State College, from numerous trials and demonstrations throughout the State.

The Pennsylvania State College
School of Agriculture and Experiment Station
Division of Extension
M. S. McDowell, Director

VEGETABLE VARIETIES RECOMMENDED FOR MARKET GARDENERS

Asparagus: Mary Washington (use large, 1-year-old roots)

Beans - Bush wax, round pods: Brittle or Round Pod Kidney Wax (Seeds white with brownish eye), Pencil Pod Black Wax (Productive, vigorous plant)
Bush wax, flat pods: Sure Crop (Seeds black)
Bush green, round pods: Giant Stringless Greenpod (Slightly longer, straighter pods and lighter colored seeds than Burpee's Stringless), New Stringless Greenpod (Longer pods with purplish brown seeds), Tendergreen (pods longer but not so broad as Stringless Greenpod; seeds brownish black, mottled),
Bush green, flat pod: Bountiful (seeds fawn colored)
Pole Wax pods: Kentucky Wonder Wax (Round pod, slightly stringy, brittle), Golden Cluster (Flat pod, stringless, good quality).
Pole green pods: Kentucky Wonder (Round pod, slightly stringy, good quality), White Creaseback (Round pod, stringless, good quality).
Bush lima: Fordhook (thick, pale green seeds).
Pole lima: Challenger (Large, thick, green seed).
Leviathan (Large, flat, white seed).

Beets: Crosby's Egyptian (Special), Early Wonder - Early.
Detroit Dark Red (Perfected Detroit, Black Knight) - Late.

Broccoli: Italian Green Sprouting (Calabrese).

Cabbage: Golden Acre (early), Copenhagen Market (second early, larger)
Glory of Enkhuizen (large, fall-kraut)
Short Stemmed Danish Ballhead (winter storage)
Penn State Ballhead (medium sized)
Hollander (smaller)
Mammoth Red Rock
Drumhead Savoy

Chinese Cabbage: Chihli (Narrow head, surest to head)

Carrot: Red Cored Chantenay (Deep color, length varies with strain)

Cauliflower: Snowball (Super, Burpeeana and Fordhook strains)

Celery: Golden Plum (Early Fortun) - Early, blanching yellow
Easy Blanching (Full-Heart, Meisch's Green) - Midseason, green, blanching white
Fordhook-Emperor - Late, green, blanching white, brittle.

Sweet Corn - Yellow: Golden Early Market - Extra early.
The Burpee, Extra Early Bantam, Spanish Gold - Second early.
Whipple's Yellow (large), Golden Bantam (small) - Early.
Buttercup (long, small ear) - Midseason.
Bantam Evergreen (medium), Mill's Golden Sunrise (large) - late.

White: Early Market - Extra early
Mammoth White Cob Cory - Second early.
Whipple's Early, Vanguard - Early.
Howling Mob - Midseason.
Early Evergreen - Main crop.
Stowell's Evergreen, Country Gentlemen - Late.

Cucumber - Slicing: Improved White Spine, Kirby Stay Green, Henderson, Green Pack - Short.
Early Fortune, Veridark, Arlington White Spine - Medium.
Davis Perfect, A.&C, President, Straight Pack, Clark's Special, Woodruff's Hybrid - Medium to long.
Longfellow, Long Green, Perfection - Long, late.

Cucumber - Pickling: Snow's Perfection (small), National Pickling (small, straight, green), Boston Pickling, Chicago Pickling (medium), Double Yield(large).

Lettuce - Loose Leaf: Grand Rapids
Crisp Head: New York No. 12
Butter Head: White Boston

Muskmelon: Golden (Late) Champlain (Medium sized, local market)-Early
Delicious (Bender selection)(Large, local) - Main crop
Hearts of Gold (Medium, high quality, local) - Main crop.
Hale's Best (Medium, local and trucking) - Main crop to late

Onions - Sets: Yellow Globe Danvers, Ebenezer-Japanese (Semi-flat, yellow).
Seed: Mountain Danvers (Earlier than Yellow Globe Danvers), Southport White Globe (Pickling and bunching, fair keeper) White Portugal & Silverskin (Pickling & bunching, poor keeper, flat), Sweet Spanish (Riverside strain) (Large, mild, good keeper, yellow).

Peas - Dwarf: Little Marvel (early), Laxton's Progress (Medium early, large), Onward, Stratagem, Dwarf Telephone (Medium to late, large pods).
Medium: Thomas Laxton (blunt pods), Gradus (Pointed pods) (medium early).
Tall: Telephone, Alderman (late).

Pepper - Red, tomato: Sunnybrook, Squash
Pimiento: Sweet Meat Glory, Perfection.
Large Sweet: Early Giant (Early), World Beater (Main crop), California Wonder (thick wall, late).
Yellow Sweet: Oshkosh (thick wall, main crop)
Hot: Long Red Cayenne, Hungarian Wax.

Pumpkin - Summer (Squash): Straightneck, White Bush, Italian Marrow (Cocozelle).

Pumpkin - Winter: Small Sugar (Small, deep orange-yellow, good keeper)
Winter Luxury (Medium size, light yellow, russet netting, good keeper).
Table Queen (Very small, for baking, light orange dry flesh, good keeper).

Radish: Scarlet Globe (Mild, small to medium, good quality) - Early Scarlet Turnip White Tip (Small to medium, mild good quality) - Early. White Icicle (Medium to large, mild, excellent) - Second early. White Strasburg (Half-long, mildly pungent, good for summer and fall). Chartier (Long, red with white tips) - Summer and fall. White Chinese (Mild), Rose Chinese (Mildly pungent), Black Spanish (Pungent) - Winter storage.

Rhubarb: McDonald (Large, red), Victoria(Large), Linnaeus (red).

Rutabaga: Purple Top Yellow Globe (Macomber, Golden Neckless strains)

Spinach: Long Standing Bloomsdale (Dark green, savoyed leaves)
Viginia Savoy (Yellows resistant, for over-wintering only)
King of Denmark (Smooth leaves, long petioles) - Spring only.
New Zealand (bush-like) - Summer.

Squash - Winter: Delicious, Golden Delicious (Medium, midseason, orange flesh, excellent quality, good keeper)
Hubbard-Green, Blue, Warted (Large, late, excellent quality good keeper). Hubbard - Golden (Medium, midseason, excellent quality, good keeper). Boston Marrow (Large, late, excellent quality, good keeper).

Tomato: Penn State Earliana, Canadian - For very early crop only.
Bonny Best - John Baer-Chalk's Jewel - Early.
Pritchard (Marglobe type, deeper crimson, but somewhat smaller fruit) - Early.
Marglobe (disease-resistant, good quality) - main crop and canning
Early Stone (fruit deep crimson, slightly flattened, smooth) - Midseason.

Pink or Purple Fruited: June Pink (Alpha Pink, Earliest Pink)
Pink fruited Earliana.
Walter Richards (Gulf State Market) - Early Globe selection.
Globe (Productive; fruit round to slightly flattened, inclined to be rough) Midseason.

Turnip: Purple Top Milan (Small to medium, flat, fair quality) - Early
White Egg (Medium, oval, good quality) - Second early
Purple Top White Globe (Large, good quality) - Midseason to late

IRREGULAR PAGINATION

VEGETABLE DISEASES IN PENNSYLVANIA IN 1932

R. S. Kirby

Growers of sweet corn in nearly all sections of Pennsylvania, will remember 1932 as the year when the Bacterial Wilt disease caused the loss of more than one-half the sweet corn crop. The severe outbreak of wilt was caused by a combination of conditions favoring infection by the wilt bacteria and the occurence of factors favoring the spread of the disease in the field.

The general rains which occurred in many sections of the state following sweet corn planting, coupled with above normal temperatures favored seedling infection. The mild winter of 1931-1932 allowed certain insects to live over the winter carrying the disease within them, and to allow certain other insects which are capable of spreading the disease in the field to be more numerous than usual in 1932. Unless exceptional conditions occur, there will not be so severe an outbreak of wilt in 1933 as in 1932

The bacteria causing this disease are reported as living from year to year on or in the sweet corn kernels, on old dead plant parts, in the soil, and inside certain insects.

The Bantam types and most of the early maturing varieties of sweet corn are the most susceptible. Later varieties such as the shoe peg types are most resistant. In Indiana, United States Department of Agriculture and State workers have developed a hybrid corn that is about 95 per cent resistant to wilt. Growing side by side in 1932 with Golden Sweet which showed a 50 per cent loss, the resistant hybrid showed no loss from wilt. The resistant hybrid is known as Golden Cross Bantam. It is about 7 to 10 days later than the average Bantam, is reported to be of good quality, and under good growing conditions produces ears about eight inches long. A number of seed companies are producing this hybrid, and any grower desirous of testing it can get a list of the seed companies producing the corn as recommended in Indiana by applying to his County Agricultural Agent.

Control Measures for Sweet Corn Wilt

1. Crop rotation and avoiding the placing of old corn fodder on ground to be planted to sweet corn should be practiced. It is suggested that old corn refuse be burned.

2. Seed treatment of sweet corn has been, almost without exception, a paying proposition for the control of root rots and may be of some help in the control of the wilt disease. However, too much reliance should not be placed on this as a single control measure.

3. Where early maturing susceptible varieties of sweet corn are planted, the previously described control measures may not prevent the disease, under ideal conditions for the development

IRREGULAR PAGINATION

and spread of the bacteria that cause wilt. It is suggested that in 1933 growers plant part of their acreage to the later, more resistant varieties or the new resistant hybrid "Golden Cross Bantam."

Damping-Off of Vegetable Seedlings

Few growers realize that where the damping-off disease of vegetable seedlings is prevented by steam or chemical treatments that nearly one-half of the seeds produce plants that otherwise would have died either before or soon after the seedlings emerged from the soil. Further, such treatments prevent many root infections which often result in weakened plants having lowered production capacities. For example, in New York in 1932 it was shown that untreated spinach yielded 286 bushels per acre, while seed treated with the simple, inexpensive red oxide of copper dust yielded 464 crates per acre, and seed treated with the copper sulphate, one hour soak, yielded 484 crates per acre. Such crops as beets, tomatoes, and spinach usually show the greatest returns from treating, but the returns from treating egg-plant, pepper, salsify, parsnip, cabbage, and cauliflower are such as to repay the grower many times over for treating.

Damping-off is a disease caused by any one of 5 or 6 fungi. Steam or formaldehyde sterilization of the soil a couple of weeks before planting the seed is the most effective control. Only a few growers, however, can use these methods, and for those who do not use steam or formaldehyde, several chemical treatments may be used at planting time, and one or two treatments may be used after the seedlings are up.

At planting time any one of the following treatments may be used: Red oxide of copper, copper sulphate, formaldehyde dust, corrosive sublimate, copper carbonate, or organic mercurials.

Red oxide of copper seed treatment. This is the easiest treatment to apply, and a very effective one against most of the fungi causing damping-off.

It consists of shaking one part of red oxide of copper with 10 parts of seed (1½ ounces red copper oxide to one pound of seed) in a tight container, such as a fruit jar, until the seeds are thoroughly coated with the dust. The excess copper dust should be removed after which the seeds are ready for planting. If red oxide of copper cannot be obtained locally, it may be purchased from Trexler Farms, R. D. # 1, Orefield, Pa.; Niagara Sprayer Company, Middleport, New York, or K. C. Livermore, Honeoye Falls, N. Y.

Seed treated with any copper compound should not be planted in hot, dry soil such as may occur in mid-summer, since injury may result.

Red oxide of copper may be used in treating seed of beets, spinach, tomatoes, eggplant, parsnip, and pepper. It may also be used on lettuce; however, under unfavorable conditions, lettuce is easily injured.

Copper sulphate seed treatment. The seed to be treated is soaked for one hour in a solution of copper sulphate (2 ounces of copper sulphate dissolved in one quart of water). The seed may be planted wet, or dried and planted several months after treating. The copper sulphate treatment is recommended for beets, spinach, and tomatoes.

Formaldehyde dust and organic mercurials should be used as recommended by the manufacturers.

Corrosive sublimate treatment of the soil. Make a 1 to 2000 solution of corrosive sublimate. After planting the seed, sprinkle one pint of solution over each square foot of soil surface and then wet the soil down thoroughly with water. The corrosive sublimate treatment is specially recommended for cabbage and cauliflower.

Chemical treatments after the seedlings are up. The application of chemicals to the soil at the base of the seedlings will help to check damping off.

Copper carbonate treatment. Stir one ounce of copper carbonate dust into six quarts of water. Pour one pint of solution to each (approximately) five feet of row. This solution should be applied as soon as any signs of damping-off appear and repeated if necessary. Copper carbonate solution is recommended for the following plants grown under glass: beets, tomatoes, eggplant, parsnip, pepper, lettuce, spinach, and cucumber.

Corrosive sublimate solution. Make a 1 to 1000 solution of corrosive sublimate (one ounce in seven and one-half gallons water). Pour one pint of solution to each five feet of row. This solution may be applied to cabbage and cauliflower plants in the seedbed and even in the field, since it controls wire stem and helps to prevent black rot as well as damping-off.

For further information on the control of damping-off, either see your County Agricultural Agent or write to the author of this article.

VEGETABLE INSECTS IN 1932

Loren B. Smith

The season of 1932 was marked by the outstanding abundance of many injurious insects such as cutworms, Mexican bean beetle, corn-ear worm, cabbage aphis, green pea aphis, and the various species of flea beetles. The Japanese beetle again caused considerable damage to sweet corn in Bucks and Philadelphia counties. The tarnished plant bug and a small beetle which usually feeds only on decaying vegetable matter, did extensive damage to celery in the south central counties.

Mexican Bean Beetle. This insect was unusually abundant and moved into much new territory which heretofore has not been invaded. The recommended control measures gave excellent results where they were properly applied. Magnesium arsenate continued to be the most effective arsenical for use against this insect. The bean beetles and their larvae feed only on the undersides of the leaves and unless all portions of the foliage are covered with the poison, efficient results are not likely to be obtained. In using power dusters or sprayers it is essential that the nozzles are so arranged that the undersides of all leaves will be well covered with the poison. One part of magnesium arsenate mixed with 5 parts of hydrated lime is recommended as a dust. For those who desire to apply a liquid spray 2 pounds of magnesium arsenate in 100 gallons of water will be found effective. If the over-wintering adult beetles, which are the first to appear on the bean plants in the early summer, are destroyed it will reduce the numbers of beetles which appear on the plants later in the season. It is good practice, therefore, to spray or dust the beans with magnesium arsenate as soon as the first beetles make their appearance.

Cabbage Aphids: Cabbage aphis became very abundant on both early and late cabbage in many districts and particularly in Lehigh, Carbon, Schuylkill and Columbia counties. Southern grown cabbage plants were bought and planted by some of the local growers Many of these seedlings were infested with aphids when they arrived and the aphids were carried in this manner to uninfested fields. Cabbage aphids winter over in Pennsylvania on mustard and other cruciferous weeds in relatively small numbers. There are usually only a few cabbage plants infested early in the season and if the grower will examine his plants for the first three or four weeks after they have been set and removes and destroys all those infested with aphids the chances are he will have but little further trouble from this insect. Where plants are purchased from distant sources and particularly when southern plants are obtained, it is suggested that before setting them out the grower dip the tops of the plants in a solution prepared by dissolving 2 ounces of nicotine sulphate (40%) and 5 ounces of soap in 3 gallons of water. This will destroy any aphids which may be present. The most satisfactory means of destroying the aphids on cabbage in the field, is by the use of a 3% nicotine dust. This treatment should be applied before the plants have been seriously injured by the plant lice. The dust is prepared by mixing 7½ pounds of nicotine sulphate with 93 pounds of a very finely pulverized hydrated lime. The mixing should be done in a regular dust mixer or other tight container. Large lard tins or 20-gallon milk cans in which are placed several stones the size of an egg are satisfactory for the purpose. After placing the materials in the container and fastening the lid tightly the can should be rolled or agitated violently for 10 or 15 minutes until the materials are thoroughly mixed. Store this mixture in a tightly closed container if it is not to be used immediately.

Corn Ear-Worm. This insect was more serious during 1932 than heretofore. Damage appeared on both early and late crops. The most extensive losses occurred in the valleys of the Susquehanna and Delaware rivers although damage was general throughout the eastern half of the state. Demonstrations were conducted on the control of this pest by the use of arsenical dusts. The results indicate that lead arsenate was superior to calcium arsenate for this purpose. Application of the poison with power dusters did not give as good results as when the dust was applied with hand dusters. Equal parts of lead arsenate and a superfine dusting sulphur was the most effective dust mixture which was tried. Three applications of the dust gave a reduction of about 65% in the number of ears injured. The first application was made when the first ear in the planting showed silk, the second when about 5% of the ears had developed silk and the last application was made when the corn was in full silk and before more than 10% of the ears had developed brown silk. To accomplish these results it is essential that the dust is thoroughly applied. Not only must the dust cover the silk and tips of the ears, but all parts of the husk should be well covered, since about 25% of the worms enter by cutting directly through the outer covering of the ear. About 12 to 15 pounds of dust are required to treat an acre of sweet corn for each application with hand dusters.

Aphids. Severe outbreaks of aphis occurred on garden peas, in some of the eastern districts. A 4% nicotine sulphate dust is recommended for use against these insects and it should be applied before the pea vines show any appreciable injury from the aphids.

New Insecticides. The use of pyrethrum extracts, combinations of pyrethrum and rotenone and standardized insecticide soaps is increasing among Pennsylvania growers. Pyrethrum being non-poisonous to man makes it an excellent substitute for the poisonous arsenicals on vegetable crops which must be treated immediately before harvest. This material can be used advantageously on beans against the bean beetle after the pods have formed, and, also on the various leaf or green crops such as lettuce, spinach, celery and chard on which the use of arsenicals should be avoided.

Several manufacturers are now marketing liquid soaps prepared from cocoanut fatty acid and a potassium base. Some are liquid and contain 40% soap on a dry basis. They are more effective insecticides than laundry soap and contain a known amount of soap per unit and can thus be measured with greater accuracy. A liquid soap is much easier to mix with cold water than is a harder sodium soap thus saving much time in the preparation of materials.

THE UNION COUNTY FARM GARDEN PROGRAM

L. E. Craumer
Lewisburg, Penna.

Dean Watts, Members of the Pennsylvania Vegetable Growers' Association, and Friends:

My subject for discussion this afternoon may not be very interesting to commercial growers of vegetables, especially since it relates to the small unit of growing vegetables which some might consider as competing with a commercial grower's business. But I assure you that in Union County, these small growers do not compete with commercial growers. In most instances in Union County, it would be impossible for the average family to have vegetables throughout the year if they did not grow these themselves There are no public markets, there are no hucksters, there are very few green grocery stores, and since most of the population lives on farms, it would be just impossible for many of the farm families to get vegetables. Therefore, I feel that our program is justified.

I assure you that if more people would develop an interest in the growing of vegetables, since most of them have no cash to buy them, the health conditions would be greatly improved and fewer people would need be fed from the "public trough". There is no question in my mind that there are many families in your county who are "on relief" and are being fed by the public. If these same families would have used a little foresight last spring and summer by planting a garden, such a condition would not have existed this winter. Of course, it is almost impossible to have a community without this calss of people who will not and cannot manage and help themselves. They would sooner ride around in automobiles and go fishing and hunting than take care of a garden. I have very little sympathy for the adults of this class but I am intensely interested in their children and it behooves you and me to see that these little ones have plenty to eat so that when they grow to manhood and womanhood they will be able-bodied men and women to take a part in the world with you and me.

Home-grown vegetables may be produced under most difficult conditions. The soil and climate of the state of Pennsylvania, however, are favorable for the production of vegetables and in most cases there are available markets for any surplus that might exist.

The home garden, to be of the greatest value, must fulfill a few needs. First, it should be large enough so that it will furnish an abundance of a variety of vegetables for immediate needs and for canning and winter storage. New kinds, such as Swiss Chard, Chinese Cabbage, Spinach, and many others should be included. There should be at least twenty-five different kinds of vegetables in every garden.

The garden should be planted in long rows so that a wheel hoe cultivator may be used to lighten the work.

If all of these things are considered, the home garden is a profitable enterprise. It will furnish more food for human consumption, per square foot, than any other piece of ground on the farm. It is nothing unusual to produce from two to three hundred dollars worth of food on an area of one-twentieth of an acre.

I shall not say very much about these gardens because one of the demonstrators, Mrs. Lester Troxell, of New Columbia, Pa., is here and will tell you about her garden. Union County's Home Economics Representative, Miss Ella Reynolds, will also tell you about the food values of these clubs and I shall devote my time entirely to the Union County farm garden program.

This work is carried on in Union County under the name of the Home Garden Clubs. These clubs are simple organizations in a community of which one member agrees to conduct a home garden demonstration. This garden shall include fifty or more different kinds and varieties of vegetables. Meetings are held at these demonstrations throughout the year. The first meeting is held about the twentieth of June when the peas are beginning to mature. The next meeting is in the form of a tour when all the demonstration gardens in the county are visited and the third meeting is in connection with the storing of the vegetables for winter use.

In Union County this work started in 1928 with two demonstrations. Since then it has increased until 1932 when we had seven clubs with a total membership of approximately 264. This represents families. The influence of this work, indirectly, has reached many more families and today one would find gardens containing new vegetables like Spinach, Carrots, Swiss Chard, etc., that five years ago would have been considered weeds. I feel that through this program many families have been taught that vegetables are essential in the diet. Of course, I appreciate that there are many grown-ups whose minds cannot be changed and whose appetites cannot be altered in the way of bringing newer foods in to the diet but the little folks will be taught to use these vegetables which are so essential and when they become fathers and mothers will consider them just as essential as potatoes in the menu.

I hope that these few remarks will be received in the spirit of good health and may many more families know these vegetables which you folks are producing and offering as greens on the markets.

VEGETABLES FROM THE FARM GARDEN EVERY DAY OF THE YEAR

Mrs. Lester Troxell, New Columbia

Our farm garden was planned and planted according to the recommendations of the Vegetable Extension Specialists. Crops were planted in long, straight rows. Barnyard manure and commercial fertilizers were used. The recommended varieties of each vegetable were grown, and representative vegetables of all the different types of vegetables were included - salads, greens, roots, and the rest. Fresh peas, beans, corn, spinach, cabbage, lettuce, celery cabbage, tomatoes, and other vegetables were used in their season; enough tomatoes were grown so that this vegetable could be served, either fresh or canned, for the whole family, every day of the year.

VEGETABLES FOR THE FARM FAMILY

Ella Reynolds, Lewisburg

A family to be happy, healthy, and contented must be well fed. Our knowledge of nutrition today shows a definite relation between food and health, and points out especially the importance of vegetables in a well selected diet. Yes, the proof has come to us that vegetables are good health insurance. A prominent physician made this statement concerning the use of vegetables: "When the vegetables begin to get out of the market, and hence, off the tables, as they do every winter, I, as a physician, must get busy."

Why does the consumption of vegetables have a direct relation to human health? Vegetables are rich in minerals; calcium to build bones and teeth - iron to build red blood cells.

Vegetables also furnish vitamins for health, normal growth, development and resistance to disease. The old nutritional slogan used to be "Count your calories." Today the maxim of good nutrition is "are you getting your vitamins?" This is not that calories are no longer important but under ordinary circumstances, if we look after the vitamins the calories will look after themselves. Now, just a word as to what these vitamins are that have assumed such importance. Just as members of a royal family have many names, only one of which is used except on state occasions, so it is with vitamins. What is known about vitamins, as about electricity, is what they do. During these wintry months, vitamin A is our best friend. It aids in general the resistance to diseases - especially infectious diseases - promotes growth, stimulates appetite, and aids in digestion. It is found in many vegetables and especially those that are actively growing ones such as leaves, young roots, and seeds It is less potent with increasing age of the vegetable.

Vitamin B stimulates the appetite and keeps digestion in order It is found in spinach, green leaves of cabbage, lettuce, carrots, young peas, and tomatoes.

Vitamin C is the factor that prevents the disease known as scurvy. This disease sometimes develops in young children because of lack of vitamin C in milk. Insufficient quantities of this substance result in retarded growth, loss of appetite, soreness and stiffness of joints, etc. A condition suspiciously like rheumatism may result from insufficient vitamin C in the diet. Tomatoes, or "love apples", as they used to call them, both cooked and raw are rich in this vitamin. Cabbage (raw) is our cheapest source.

Vegetables are important in helping to keep the alkalinity of the blood normal. They are outstanding for their laxative properties. They help prevent constipation, over weight, indigestion, and colds. In this country alone more than $50,000,000 yearly are spent on cathartics. Only a small portion of this consumption of cathartics is the result of physicians' prescriptions because every doctor knows that their constant use is a distinct detriment to health. The natural elimination should be affected as nature intended it should be by plenty of vegetables in the diet - with other healthful foods.

Our appetite rebels against food that is poorly seasoned or unattractively served. Crisp raw vegetables! Their high yellows, greens, reds, and whites bring up visions of colorful and flavorsome vegetable meals. Yet, all too frequently when cooked and served, these same vegetables have lost every vestige of their original beauty and flavor - and all because of poor cooking. What are the best methods of cooking vegetables and can they be cooked successfully without water is one of the homemakers big problems. Attempts to cook evegetables without water in a sauce pan on top of the stove invites scorching and burning.

We have found that cooking them in just enough boiling water to coverthe bottom of the utensil produces delicious and nutritious vegetables. The pan should be tightly covered throughout the cooking period. In cooking cabbage, brussels sprouts, onions, and strong flavored vegetables, you may prefer a milder flavor than is produced by this method. In this case, cook such vegetables in a small quantity boiling water with the cover off throughout the cooking period. The anoma will not go through the house and the color will be better.

"Will soda improve the color of vegetables?" is another question for the housewife. I prefer the natural color which is obtained by cooking them as I just suggested. Soda tends to destroy the vitamins present.

As for the canned vegetables you use during the winter months, to bring them to the table deliciously full-flavored, pour them, liquor and all, into a skillet; turn on a full heat and boil them rapidly with stewpan uncovered until as much of the liquor as you desire is removed. Season to taste and serve in their liquor.

Today, when one remarks about a good dinner he has enjoyed at such a place, it is not always that common expression, "Oh, I had the best steak!" or "I had the best chicken dinner!" but "That vegetable dinner surely was tasty and attractive!" We are and we should give more thought to color and consistency of our meals. To explain, cheese souffle, sweet potatoes, buttered carrots, and baked custard for the same dinner sound weary because of sameness in color and consistency. To add more spark to the meal, choose vegetables offering sharp contrast in texture - not cabbage and spinach together but spinach and carrots or string beans and stewed corn.

During the past year, stretching the family dollar has been the keynote of the home account. Watch the itemized history of the household dollar. Guard the food totals but prevent health costs. How?

It is my hope that during this spring and summer there will be more gardens in lots and backyards than in any year since the World War. To provide the family with a variety of vegetables throughout the entire year, at least twenty-five different ones should be planted.

Do not be afraid to stray from the beaten path to add zest to flagging appetites by planting some of the newer vegetables. Brussels Sprouts belong to the cabbage family and are ideal for that low cost menu for early winter. This vegetable might be compared with cabbage as a lemon is compared with a grapefruit.

"What is a grapefruit?" -- "Strictly sepeaking, it is a lemon that has been given a chance and taken advantage of it."

The refined cabbage, Mr. Cauliflower, that Early Snowball variety should have a place in your garden. Chinese Cabbage makes a delicious salad or cole slaw. Endive is an excellent salad plant for fall and early winter use. The garden would not be complete without the chief of Greens - Spinach. Swiss Chard and Kale add to delicious menus. Do not forget Broccoli, that vegetable that is especially important for its minerals and vitamins. Get acquainted with all of these vegetables and many others. Why not plan your garden this year in order to have a surplus of greens, tomatoes, and other vegetables to can for next winter? To meet the family needs, do not fail to purchase vegetables during the winter if necessary. Every person in your family needs two vegetables a day other than potatoes. Greens twice a week such as Spinach, Kale, etc. Tomatoes three times a week and some raw vegetables every day.

Dr. Eddy calls our vegetables "protective foods." He says, "They help to preserve the characteristics of youth." In summarizing we have found that they do because

1. They furnish minerals for body regulation.
2. They furnish vitamins for our well-being and building.
3. They furnish bulk, help regulate body temperature and eliminate waste.
4. They give color, flavor, texture, and variety to add zest to any meal.

Therefore, without fuss, see that your diet has an abundance of attractive and appetizing vegetables on your table daily. You can increase wealth, protect health, by budgeting for future needs, if you remember the nutritional slogan: "Plan, Plant, Preserve, and Prosper." So, do not forget those vegetables in the diet because they look good, they taste good, and they are good for you.

THE VALUE OF VEGETABLES

Grace P. Bacon

The place of vegetables in the diet may be shown best by referring to the vitamins and minerals which vegetables are known to contain. The minerals, calcium and phosphorus for building strong bones, teeth, and other tissues and for maintaining the proper alkalinity of the blood, and iron for blood building, are essential for healthy growth of young persons, and for maintenance of health in adults. The vitamins are the spark which helps the body to make the best possible use of foods, both fuel-forming and body building.

Vegetables for Minerals

The vegetables listed in the table below contain the minerals designated at the head of each column, in sufficient quantity to make them important sources of supply.

Minerals in Different Vegetables

Calcium	Phosphorus	Iron
Asparagus	Beans	Asparagus
Beet Greens	Brussels Sprouts	Beans
Cabbage	Cabbage	Beet Greens
Carrots	Cauliflower	Cabbage
Cauliflower	Celery	Cauliflower
Celery	Dandelion Greens	Celery
Chard	Kale	Chard
Dandelion Greens	Kohl-rabi	Dandelion Greens
Kale	Lettuce	Eggplant
Kohl-rabi	Parsnip	Kale
Lettuce	Peas	Kohl-rabi
Rhubarb	Pumpkin	Lettuce
Rutabaga	Spinach	Peas
Spinach		Peppers
String beans		Potatoes (white)
Turnips		Rhubarb
		Spinach
		Tomatoes

Vegetables for Vitamins

Vitamin A promotes growth and well-being, and builds up resistance to infections in the body, particularly to colds and other diseases of the air passages, eyes, and lungs. Vegetables with abundant green or yellow color are richest in this vitamin.

Vitamin B promotes growth and increases appetite.

Vitamin C is essential for healthy bone and tooth formation and maintenance.

Vitamin G promotes growth and stimulates appetite. It differs from vitamin B in being relatively more heat-stable, and is therefore less subject to loss in cooking.

The vitamin content of different vegetables is shown in the table below. In each column, the + sign shows that the vitamin is contained by the particular vegetables; ++ indicates that the vegetables is a good source of the particular vitamin; +++ indicates that the vegetable is an excellent source. If no sign is present, either there is none, or the quantity is not known.

Vitamin Content of Different Vegetables

Vegetable	Vitamin A	Vitamin B	Vitamin C	Vitamin G
Asparagus	Varies with green color	+ + +		+ + +
Beans, shell	+	+ +		
Bean sprouts	+	+ +	+ +	
Beans, stringless	+ +	+ +	+ +	
Beets	+	+	+	+ +
Beet greens	+ +	+ +		+ + +
Cabbage, green, raw	+ +	+ +	+ + +	+ +
Cabbage, head, raw	+	+ +	+ + +	+ +
Cabbage, head, cooked	+	+ +	+	+ +
Cabbage, sauerkraut	+	+	+ to + +	
Cantaloupe	+ +	+ +	+ +	
Carrots, young, raw	+ + +	+ +	+ +	+ +
Carrots, stored	+ + +	+ +	+	+ +
Cauliflower	+	+ +	+	+ +
Celery, blanched	- to +	+ +		
Celery, green leaves	+ +	+ +		
Chard	+ +	+ to + +		
Cress	+ + +	+ +	+ + +	+ +
Cucumber	- to +	+	+ +	
Dandelion greens	+ +	+ +	+	+ +
Eggplant	+	+		
Endive	+		+	
Escarole	+ + +			
Kale	+ +			
Kohl-rabi			+	
Lettuce	+ to + +	+ +	+ + +	+ +
Okra		+ +		
Onions, raw	- to +	+	+ +	+
Onions, cooked	- to +	+	+	+
Parsley		+ +		
Parsnips	- to +	+ +		
Peas, fresh green	+ +	+ +	+ + +	+
Peppers, green	+ +	+ +	+ + +	
Potatoes, sweet	+ +	+ +	+ +	
Potatoes, white	+	+ +	+ +	+ +
Pumpkin	+ +	+	+	
Radish	- to +	+ +	+ +	
Rhubarb			+	
Rutabaga	- to +	+ +	+ + +	+ +
Spinach, raw	+ + +	+ +	+ + +	
Squash, Hubbard	+ +			
Tomatoes, raw or canned	+ +	+ +	+ + +	+ +
Turnips	- to +	+ +	+ +	+ +

If you have not already paid your dues for 1933 send your check or money order for $1.00 to W. B. Mack, Secretary-Treasurer, State College, Pa. Subsequent copies of the Vegetable Growers' News, of which there will be two or three more in 1933, will be sent only to those whose dues are paid.

PENNSYLVANIA VEGETABLE GROWERS' NEWS

Volume 3 October 1933 No.2

Publication of the Pennsylvania Vegetable Growers' Association

The annual meeting of the Pennsylvania Vegetable Growers' Association will be held as usual, in connection with the Pennsylvania Farm Show, at Harrisburg, on January 16 and 17, 1934.

WANTED: SUGGESTIONS FOR THE PROGRAM

Below is a list of possible subjects. This list does not include all the good ones and you may have some in mind. Now is the time to express your preference. Help the Program Committee by numbering the suggested topics in the order of your preference, or write in preferred subjects in the blank spaces provided. If you have any suggestions regarding speakers, write their names in the spaces provided. Return your list at your earliest convenience to

W. B. Mack
Horticulture Building
State College, Pa.

Beans and Peas _____
Celery and salad crops _____
Cucumbers and vine crops _____
Root crops _____
Other crops _____
_____
_____

Varieties:
New hybrid inbred varieties of sweet corn, their adaptability and market quality _____
New strains of canning and market tomatoes _____
Varieties of beans and peas _____
Varieties of celery and Lettuce _____
Varieties of other crops _____
_____
_____

Disease and Insect Control
Seed treatment and soil sterilization _____
Disease resistance and immunity _____
Important insect pests of 1933 _____
Black rot and black leg of cabbage and related crops _____
Other diseases and insects _____

Subject	Order of Preference
Soil Fertility in General	
Lime requirement and acidity	
Row applications of fertilizer	
Nitrogenous fertilizer materials	
Green manures and cover crops	
Other suggested topics on fertility	
Marketing in General	
City farmers' markets	
The new Deal and Vegetable Growers	
Trends in marketing	
New developments in storage	
Other suggested topics on marketing	
Crops	
Sweet corn	
Tomatoes	
Cabbage	
Spinach and Greens	
Other subjects:	

HORTICULTURE WEEK AT STATE COLLEGE

December 12, 13, 14, 1933

The special topic for discussion during the Annual Horticulture Week this year is the control of insects and diseases. The fundamental principles of insect and disease spread and infection will be illustrated for all growers, and practical applications will be discussed by separate groups of vegetable growers, fruit growers, and florists and nurserymen. Growers' round tables will be held on disease and insect problems, as well as on other phases of vegetable production. All who are interested are urged to be present during the meetings. Discussions will be led mainly by members of the college staff; a few outside speakers may be featured.

LATEST INFORMATION ON STORAGE OF CELERY

During the past three or four seasons, the trench method of storing celery, ordinarily a successful method, resulted in serious losses in many cases because the weather was warmer than usual during late Fall and early Winter. Rots, which result from the condensation of moisture always occurring when the air temperature is higher than the temperature in the trench, caused most of the damage.

Such condensation is unavoidable under these circumstances, regardless of the care expended in constructing well-drained trenches. The trench method, however, has certain advantages over any other type of common or unrefrigerated storage, in that the plants do not wilt, and some growth of heart and some blanching occur during the storage period. Trenching is a cheap and usually an economical method of temporary storage. For these reasons, there are numerous cases in which trench storage is to be recommended. When it is the method followed, the following precautions should be observed:

1. Only blight-free, healthy celery should be stored.
2. Roots should not be trimmed, except that some of the root system is cut off when the plants are lifted.
3. Only dead leaves should be removed.
4. The trench should be well drained, and deep enough that the tops extend only slightly above the level of the ground.
5. The covering should not be placed over the trench until cold weather arrives, and only such covering should be supplied as is necessary to keep the leaves from freezing.
6. Tops should be dry when celery is trenched, and should always be kept dry during storage.

Cold storage is becoming the most popular method for celery, among commercial growers. The plants are untrimmed, both tops and roots, except for the removal of dead leaves around the outside of the crown. Celery is packed in slatted crates, and stored at 31°-32° F. The leaves should be kept dry, as in trench storage.

If any blanching is done, it must be completed before the celery is placed in storage, because no heart growth nor blanching occur at the temperature specified. For these reasons, strains of Easy Blanching, such as Full Heart, are preferred for cold storage in the Philadelphia district, though other varieties, such as Fordhook, Pascal, and Winter Queen have been stored very satisfactorily.

SPINACH VARIETY TRIALS AT STATE COLLEGE IN 1933.

Two variety trials of spinach were conducted at State College in 1933, one in early Spring, and a second in the Fall, the results of which are now just complete. Altogether, twenty-five varieties and strains, from ten different seed sources, were included, in the two trials. Of the seed companies represented, nine are American and one a Holland firm. Particular attention was paid to strains of the varieties Bloomsdale Savoy, Longstanding Bloomsdale, Virginia Savoy, Giant Thick Leaf (Giant Nobel or Nobel Gaudry) and King of Denmark. In the Spring trials, the Bloomsdale strains were best, as compared with other varieties. They attained larger size, were satisfactorily longstanding, dark green in color, fairly upright, and beautifully savoyed. Lupton's Bloomsdale Savoy, Stokes' Dark Green Bloomsdale, Landreth's Bloomsdale Reselected and Bloomsdale Long-Standing, Forbes' Longstanding Savoy, and Associated Seed Growers' Longstanding Bloomsdale were among the most satisfactory strains. The so-called Bloomsdale, Bloomsdale Savoy or Bloomsdale Reselected strains were a little more erect than the Longstanding Bloomsdale strains, and were only a little less longstanding. (The erect character of a variety is important, in that the plants are easier to cut, and less grit splashes upon the leaves during rainstorms).

Several strains of Longstanding Gaudry were quite satisfactory in the longstanding character, but they did not attain the size nor thickness of leaf as did the Bloomsdale and other Savoy varieties, nor were they as dark in color.

In the fall trials, the Bloomsdale strains were again very satisfactory; the Virginia Savoy strains, however, were more erect and taller, though somewhat less savoyed. The petioles of this variety are quite long. Landreth's Bloomsdale Virginia Savoy combines many of the desirable characteristics of both Virginia Savoy and Bloomsdale; it is a little more savoyed than the usual Virginia Savoy strains, and is as upright and tall as the others. Old Dominion, reputed to be more blight resistant than Virginia Savoy, was less desirable in other traits, being smaller, less savoyed, and less upright than the standard Virginia Savoy type. It is not longstanding.

The Giant Thick Leaf, Viroflay, Gaudry, and Nobel strains, also appeared to good advantage in the fall trials. These strains do not present as attractive an appearance in the basket as do the Savoy varieties, but they have certain very desirable characteristics. When they are well grown, they are heavy, thick-leaved, and smooth, and because of the latter characteristic are less gritty, more easily cleaned and thus more agreeable to eat.

Two new varieties from Zwaan and de Wiljes Holland seed growers, namely Standwell Prickly and Hollandia Prickly, were unusually large and thick-leaved in the Fall trials. Both were low growing, broad, and shiny, very dark green, and a little less tender than other varieties, but were by far the best in flavor of any of the varieties tested.

PENNSYLVANIA VEGETABLE GROWERS' NEWS

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The following is the program for the annual meeting, to be held in connection with the Pennsylvania Farm Show, in Room E, Farm Show Building, January 16 and 17, 1934.

Tuesday Morning at 9:30

Pres. William G. Wenker, Bustleton, Chairman
Vegetable Crop Rotations - W. B. Mack, State College
Influence of Soil Reaction and Organic Matter on the Growth of Vegetable Crops (Illustrated) - H.H. Zimmerley, Director of Virginia Truck Experiment Station, Norfolk, Virginia.
Nitrogenous Fertilizers and their Use - G.J. Stout, State College.
Irrigation with Porous Canvas Hose - J.R.Haswell, State College.

Tuesday Afternoon at 1:30

Vice-President, H.G. Brackbill, Malvern, Chairman.
Address by the President - W.G.Wenker, Bustleton.
Business Session.
Diseases of Cabbage and Related Crops (Illustrated) - G. L. I. Zundel, State College.
Important Vegetable Diseases of 1933, and Suggestions for Disease Control in 1934 (Illustrated) - R. S. Kirby, State College.
Important Vegetable Insects of 1933, and Suggestions for Insect Control in 1934 (Illustrated) -L. B. Smith, State College.
Soil-inhabiting Pests; the Tomato Pinworm, and Insect Pest New in Pennsylvania (Illustrated) - C.A. Thomas, Bustleton.
Growers' Round Table on Diseases and Insect Pests of Vegetable Crops.

Wednesday Morning at 9:00

W. G. Wenker, Chariman.

Breeding New Varieties of Cabbage and Sweet Corn (Illustrated) - C. E. Myers, State College.
Variety and Strain Tests of Vegetables in 1933 (Illustrated) - J.M. Huffington, State College.
Recent Improvements in Eastern Virginia in the Preparation of Vegetables for Market (Illustrated) - H. H. Zimmerley, Director of Virginia Truck Experiment Station, Norfolk, Virginia.
The Agricultural Adjustment Administration and the Vegetable Grower - F. P. Weaver, State College.

Wednesday Afternoon at 1:30

Dean R. L. Watts, State College, Chairman

The Vegetable Insect and Disease Control Program in Philadelphia County - C. K. Hallowell, Philadelphia.
Results of Celery Spraying Demonstration on my Farm - Stanley Q. Becker, Philadelphia
The Vegetable Variety Program in Allegheny County - H. R. Eby, Pittsburgh.
The Vegetable Marketing Program in Luzerne County - J. M. Hutchinson, Wilkes-Barre.
Vegetable Variety Demonstration on my Farm. - R. R. Braden, Berwick.
Vegetable Growing Projects in Pennsylvania - W. B. Nissley, State College.
New Ideas in Vegetable Production and Marketing - Growers' Question Box and Round Table.

The call for program suggestions met with a good response. Not all topics which were suggested could be included in the program, because of the time limit of two days, and because some suggestions were received after the program was sent to the printer. Preference was given to the subjects for which most members showed preference. Other subjects members requested, however, are being given to speakers on closely related topics, and, as nearly as possible, all information desired will be presented, under one subject or another.

Every effort should be made by members to make the program a big success, and to make the exhibit of vegetables attractive and impressive.

EARLY CABBAGE VARIETY TRIALS AT STATE COLLEGE IN 1933

In 1933, seven strains of Golden Acre, three of Copenhagen Market, and three of Enkhinzen Glory were compared on the College farms. Several of the Golden Acre strains were designated by distinguishing names, such as Special, Viking, Super Strain, etc., while the remainder were named simply Golden Acre. All seven strains of Golden Acre were similar in many respects, as were also two strains of Copenhagen Market, which could scarcely be distinguished from the Golden Acres, either in appearance, size, or earliness. The Golden Acre Special strain of Joseph Harris and the Super strain of Forbes were slightly smaller, and more uniform in size, shape, and time of maturity, than the other strains. The differences, however, were small, and all strains produced a very satisfactory crop.

Large Late Copenhagen and Enkhinger Glory matured at about the same time, nearly three weeks later than the Golden Acre strains, which matured in about 135 days after the time of seeding. Harris' strain of Enkhinzen Glory was a little more uniform than the other strains, both in size and shape of heads. This variety appeared to be quite satisfactory as a second early or midseason cabbage.

Marion Market, a yellows-resistant Copenhagen Market strain, matured about midway between the Golden Acre and the Late Copenhagen or Enkhinzen strains. This strain is uniform, short-stemmed, medium in size, and seems a desirable second early, even if the yellows disease is not troublesome.

End of Volume